

USE OF X-RAYS IN THE HEALING ARTS



2006 Workshop
Kansas Radiation Protection Regulations
Part 5

Registration

- Part 2

28-35-152. Any person possessing a registrable item shall register with the department

28-35-153. Any person who is not registered and who acquires possession of a registrable item shall register with the department



Part 5



- This part shall establish requirements for the diagnostic use of X-rays in medicine, dentistry, osteopathy, chiropractic, podiatry, and veterinary medicine.



Part 5:

- You shall have a licensed practitioner of the healing arts, or by an individual licensed to practice dentistry **authorize** each exposure. (Exception Mammography, if certified facility)
- Each individual who operates any X-ray system **shall be instructed** in the safe operating procedures and shall be competent in the safe use of the equipment.



Dr. Jane Smith-Doe taught me how to use the x-ray unit. She showed me how to position people for their x-ray. I know to push this button for a chest x-ray and so on. In fact she took x-rays of me so I can see what the x-ray films look like. Is this satisfactory training on an x-ray unit?



- NO!
- No one should be taking x-rays of you unless it is for an authorized medical procedure. X-rays for the purpose of training on an individual is prohibited.



Training should include:

- Identification of controls.
- Function of each control
- How to use technique charts
- Use of the following:
 - 1) Collimation
 - 2) Filtration
 - 3) X-ray tube to image receptor
 - 4) Gonad shielding
 - 5) Personnel protection
 - 6) Grids
 - 7) Film processing
 - 8) Emergency procedures
 - 9) Personnel dosimetry
 - 10) Units of radiation



Technique Chart

- A chart shall be made available to the operator of each diagnostic X-ray system that specifies, for each examination performed with the system, the following information:



The technique factors to be utilized taking into account the patient's body part and anatomical size, body part thickness, and age.

The type and size of the film or film-screen combination to be used.

The type and focal distance of the grid to be used, if any.

The source-image receptor distance to be used, except for dental intraoral radiography.



The type and placement of patient shielding to be used.

X-ray Utilization Log

- Except for veterinary facilities, each registrant shall maintain an X-ray log containing each patient's identifier, the type of each examination, and the date on which each examination was performed.

AND



Don't forget

- When the patient or film is provided with human auxiliary support, the name of the human holder shall be recorded.



EXAMPLE

DATE	PATIENT ID	EXAM TYPE	HUMAN HOLDER'S NAME
12/06/2006	123456	CXR	PATIENT'S MOTHER
12/06/2006	789432	KUB	JANE SMITH (Nurse)
12/06/2006	987456	LT. Hand	Father



Safety Procedures

- Each facility shall create and make available to all X-ray operators **written** safety procedures including the following:
- Patient holding procedures
- The use of ALARA (Time, Distance and Shielding)



Records

- Each registrant shall maintain the following minimum information for each X-ray system, for inspection by the department.
 1. Maximum technique factors
 2. Model and serial number of all components
 3. Aluminum–equivalent filtration of the useful beam
 4. Tube rating charts



5. Records of surveys, calibrations, maintenance and modifications
6. A scale drawing of the room (indicating use areas)



Warning Labels

- The control panel containing the main power switch shall bear this or an equivalent warning statement, which shall be legible and accessible to view:

“WARNING: this X-ray unit could be dangerous to patient and operator unless safe exposure factors and operating instructions are observed.”



What will KDHE be looking for?



- Registration
- Authorization
- Training/Safety
- Paperwork/Compliance



What is a RH-3 Form?

FORM RH-3
(03/02)

STATE OF KANSAS
DEPARTMENT OF HEALTH AND ENVIRONMENT

NOTICE TO EMPLOYEES

STANDARDS FOR PROTECTION AGAINST RADIATION (Part 4)
NOTICES, INSTRUCTIONS AND REPORTS TO WORKER: INSPECTIONS (Part 10)



In the Kansas Radiation Protection Regulations, the Department of Health and Environment Has Established Certain Provisions for the Options of Employees Engaged in Activities under an Agency License or Registration.

YOUR EMPLOYER'S RESPONSIBILITY

Your employer is required to:

1. Apply these regulations to work involving sources of radiation.
2. Post or otherwise make available to you a copy of the Department of Health and Environment regulations, licenses, and operating procedures which apply to work you are engaged in, and explain their provisions to you.
3. Post any Notice of Violation involving radiological working conditions, proposed imposition of civil penalties or orders.

YOUR RESPONSIBILITY AS AN EMPLOYEE

You should familiarize yourself with those provisions of the Department of Health and Environment regulations, and the operating procedures which apply to the work you are engaged in. You should observe their provisions for your own protection and that of your co-workers.

WHAT IS COVERED BY THESE REGULATIONS

1. Annual dose limits of individuals occupationally exposed to radiation and radioactive materials;
2. Measures to be taken after accidental exposure;
3. Personnel monitoring, surveys and equipment;
4. Caution signs, labels and safety interlock equipment;
5. Occupational dose records and reports;
6. Options for employees regarding Department Inspections; and
7. Related matters.

CONTACTING THE DEPARTMENT

Inquiries dealing with the matters outlined above can be sent to Radiation Control Program, Bureau of Air and Radiation, Kansas Department of Health and Environment, 1000 SW Jackson, Suite 310 Topeka, Kansas, 66612-1566, call (785) 296-1500, FAX (785) 296-6984, or the internet at www.kdhe.state.ks.us/radiation

POSTING REQUIREMENT

Copies of this notice must be posted in a sufficient number of places where employees are engaged in activities licensed or registered pursuant to parts 2 and 3 of the Kansas Radiation Protection Regulations, to permit individuals the opportunity to observe a copy of this notice while on the way to or from the above mentioned activities.

REPORTS ON YOUR EXPOSURE HISTORY

1. The Department of Health and Environment regulations require that your employer give you a written report if you receive an occupational dose in excess of any applicable limit as set forth in the regulations or in the license. The occupational dose limits for individuals are set forth in 28-35-212a, 28-35-212f, 28-35-213a and 28-35-213b of the regulations. These sections specify occupational dose limits for exposure to radiation and exposure to concentrations of radioactive material in air or water.
2. If you work where personnel monitoring is required, or if you request information on your occupational dose.
 - a. Your employer must give you a written report, upon termination of your employment, of your occupational dose, or upon request, and
 - b. Your employer must advise you annually of your occupational dose.

INSPECTIONS

All licensed or registered activities are subject to inspection by representatives of the Department of Health and Environment. In addition, any employee or representative of the employees who believes that there is a violation of the Nuclear Energy Development and Radiation Control Act 48-1601 et seq., the regulations issued thereunder, or the terms of the employer's license or registration with regard to radiological working conditions in which the employee is engaged, may request an inspection by sending a notice of the alleged violation to the Kansas Department of Health and Environment. The request must set forth the specific grounds for the notice, and must be signed by the employee or a representative of the employees. During inspections, Agency inspectors may confer privately with employees, and any employee may bring to the attention of the inspectors any past or present condition which they believe contributed to or caused any violation as described above.

RAISING CONCERNS

No licensee or registrant shall discharge or in any manner discriminate against any worker because the worker has filed any complaint, or instituted or caused to be instituted any proceeding, or has testified or is about to testify in any proceeding, or because of the exercise by the worker on behalf of the worker or others of any option afforded by the regulations.



What does it cover?

1. Your Employer's Responsibility
2. Your Responsibility as an Employee
3. What is covered by these Regulations
4. Contacting the Department
5. Reports on your Exposure History
6. Inspections
7. Raising Concerns



Raising Concerns

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KRPR

Kansas Radiation Protection Regulations

- HVL
- KVP
- Timer
- Reproducibility
- Linearity
- ESE
- Beam Limiting



Dental Specific

- SSD is limited to not less than:
18cm above 50 KVP
10cm if operated at 50 KVP only
- No machine shall be operated at less than 50 KVP
- Beam Limiting at a minimum SSD to a circle of no more than 7cm
- Individual monitoring is required



Veterinary Specific

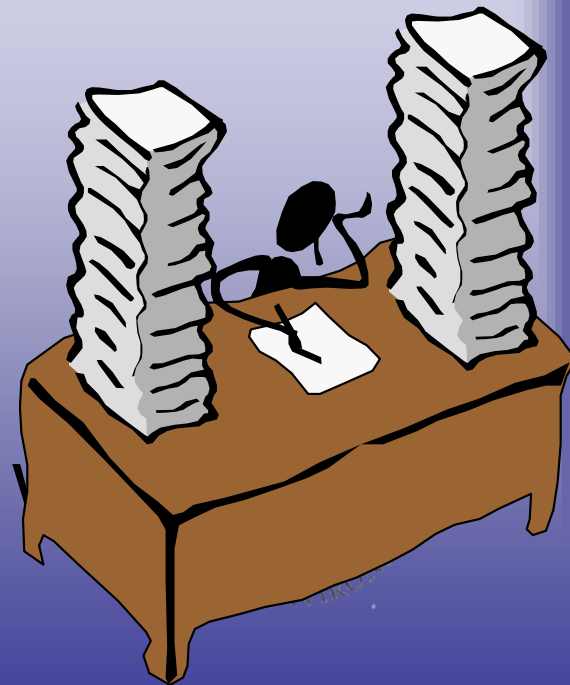
- No patient log needed
- If animal is held you must wear protective aprons and gloves and positioned so no part of their body will be struck by the useful beam
- Exposure to any individual who consistently assist with restraining the animal shall be monitored



We haven't been inspected in years
or not at all.
So why now?

Before June 2006.

- 1) Shortage of staff
- 2) Funds
- 3) ~2,500 active x-ray registrants
equals ~ 6,000 tubes



Credits

- Presentation Speaker
Cynthia Siemers
- Presentation Writer
Judee Walden
- Regulations
Tom Conley

